

YAMAMURA et al
Appl. No. 10/671,438
Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-20. (Cancelled).

21. (Previously Presented) A process for photo-fabricating a three-dimensional object by selectively curing a photo-curable resin composition comprising:

(a) an oxetane having two or more oxetane rings;
(b) an epoxy compound; and
(c) a cationic photoinitiator,

wherein said process comprises

- (i) forming a layer of said composition;
- (ii) selectively irradiating said layer of said composition to form a solid cured resin layer;
- (iii) forming a layer of said composition on the solid cured resin layer; and
- (iv) repeating steps (ii) and (iii).

22. (Previously Presented) A process for photo-fabricating a three-dimensional object by selectively curing a photo-curable resin composition comprising:

(a) an oxetane;
(b) an epoxy compound; and

(c) a cationic photoinitiator,

wherein said process comprises

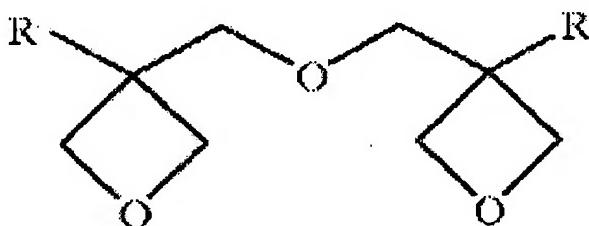
(i) forming a layer of said composition;

(ii) selectively irradiating said layer of said composition to form a solid cured resin layer;

(iii) forming a layer of said composition on the solid cured resin layer; and

(iv) repeating steps (ii) and (iii);

wherein said oxetane is represented by the following formula (10):



wherein R represents a hydrogen atom; a fluorine atom; an alkyl group having from 1 to 6 carbon atoms; a fluoroalkyl group having from 1 to 6 carbon atoms; an aryl group having from 6 to 18 carbon atoms; a furyl group; or a thienyl group.

23. (Previously Presented) The process of claim 22, wherein each R represents an alkyl group having from 1 to 6 carbon atoms.

24. (Previously Presented) The process of claim 22, wherein each R represents an ethyl group.

25. (Previously Presented) A process for photo-fabricating a three-dimensional object by selectively curing a photo-curable resin composition comprising:

- (a) an oxetane having 3 or more oxetane rings;
- (b) an epoxy compound; and
- (c) a cationic photoinitiator,

wherein said process comprises

- (i) forming a layer of said composition;
- (ii) selectively irradiating said layer of said composition to form a solid cured resin layer;
- (iii) forming a layer of said composition on the solid cured resin layer; and
- (iv) repeating steps (ii) and (iii).

26-67. (Cancelled).

68. (Previously Presented) A process for photo-fabricating a three-dimensional object comprising selectively curing a photo-curable resin composition comprising:

- (a) an oxetane;
- (b) an epoxy compound; and
- (c) a cationic photoinitiator.

69. (Previously Presented) The process of claim 68, wherein said composition comprises 3-50 wt %, relative to the total weight of the composition, of said epoxy compound.

70. (Previously Presented) The process of claim 68, wherein an H-shaped object obtained by curing said composition has a dimensional accuracy value of less than or equal to 0.10 mm.

71. (Previously Presented) A three-dimensional object obtained by the process of claim 68.

72. (Previously Presented) A three-dimensional object obtained by the process of claim 69.

73. (Previously Presented) A three-dimensional object obtained by the process of claim 70.

74. (Currently Amended) A radiation-curable composition comprising:

- (a) an epoxidated compound obtained by a process comprising epoxidating a double bond between carbons of a corresponding compound having an ethylenically unsaturated bond using an appropriate oxidizing agent such as hydrogen peroxide or peroxy acid process;
- (b) a polyfunctional monomer;
- (c) a polyhydric alcohol;
- (d) an oxetane compound having one or more oxetane oxetane groups;
- (e) one or more free-radical photoinitiators; and
- (f) one or more cationic photoinitiators.

75. (Previously Presented) The radiation-curable composition according to claim 74,
wherein said composition further comprises a pigment and/or a dye.

76. (Previously Presented) The radiation-curable composition according to claim 75,
wherein said composition further comprises one or more additives different than the pigment or
dye.

77. (Currently Amended) A radiation-curable composition used in photo-fabrication of
an object comprising:

- (a) an epoxidated compound obtained by a process comprising epoxidating a double bond between carbons of a corresponding compound having an ethylenically unsaturated bond using an appropriate oxidizing agent such as hydrogen peroxide or peroxy acid process;
- (b) pentaerythritol tetra (meth)acrylate;
- (c) propoxylated modified glycerol;
- (d) 3-ethyl-3-hydroxymethyloxetane;
- (e) a free-radical photoinitiator 1-hydroxycyclohexyl phenyl ketone;
- (f) a cationic photoinitiator (bis[4-diphenylsulfonio]-phenyl)sulfide bis hexafluoro antimonate; and
- (g) a pigment and/or a dye.

78. (Previously Presented) The radiation-curable composition according to claim 77,
wherein said composition further comprises one or more additives different than pigment or dye.